

AMENDMENTS TO THE CLAIMS

The listing of claims below replaces all prior versions, and listings, of claims in the application.

Listing of Claims

1. (Currently Amended) A method of supporting at least an interlace scan mode and a sequential scan mode in a single imager ~~[[(1)]]~~ for use in a video camera wherein the imager ~~[[(1)]]~~ includes a CCD portion ~~[[(14)]]~~, the method comprising the steps of:

(a) in response to ~~[[a]]~~ an interlace scan mode selection signal, causing said CCD portion ~~(14)~~ to generate ~~generating a corresponding one of an interlace scan image signal and a sequential scan image signal, said sequential scan image being comprised of $2n$ scan lines, where N is the number of scan lines of an image to be obtained;~~

(a2) in response to a sequential mode selection signal, causing said CCD portion (14) to generate a sequential scan image signal, said sequential scan image signal having $2N$ lines composed of odd lines and even lines, where N is the number of scan lines of an image to be obtained;

(b) synchronizing each pair of odd ~~lines~~ and even lines of ~~a given~~ the sequential scan image signal;

~~(c) passing said interlace scan image signal in said interlace scan mode and said synchronized pair of odd and even lines of said given image in other scan mode;~~

(d) doing ordinary image regulations ~~such as contour correction in parallel to a first input image signal and a second input image signal~~ for said synchronized odd and even lines of the sequential scan image signal to provide ~~a first regulated image signal and a second regulated image~~

~~signal~~ a first regulated sequential scan image signal of odd lines and a second regulated sequential scan image signal of even lines;

(d2) doing the ordinary image regulations for said interlace scan image signal to provide a regulated interlace scan image signal;

(e) in response to ~~said mode selection signal indicating~~ said sequential scan mode selection signal, generating a new sequential scan image signal from said first and second regulated sequential scan image signals, which are composed of regulated odd and even line signals in the sequential scan mode;

~~(f) in response to said mode selection signal indicating said sequential scan mode, adding said first and second regulated image signals (i.e., said regulated odd and even line signals) together to generate a new interlace scan image signal, and~~

(g) outputting a the regulated interlace scan image signal in said interlace scan mode and ~~said new interlace scan image signal in said sequential scan mode; and~~

(g2) outputting said new sequential scan image signal in said sequential scan mode.

2. (Currently Amended) A method as defined in claim 1, wherein the method further supports a dynamic range-widening scan (WS) mode, ~~wherein said step (a) includes the step of~~ and wherein the method further comprises the steps of:

(a3) causing said CO portion (14) to ~~generating~~ generate ~~a corresponding one of an interlace scan image signal, a sequential scan image signal and a dynamic range-widening scan WS~~ image signal of 2N lines in response to a WS mode selection signal, every other line of the dynamic range-widening scan WS image signal being exposed longer than adjacent lines of said

dynamic range-widening scan WS image signal, and wherein the method further comprises the steps of:

(b) passing synchronizing each of odd lines of said dynamic range-widening scan WS image signal with a corresponding even line of said dynamic range-widening scan image signal to said step (b) to provide a first synchronized dynamic range-widening scan image signal of odd lines and a second synchronized pair of odd and even lines of said WS image signal dynamic range-widening scan image signal of even lines;

(i) generating a dynamic range-widened image signal from said second synchronized pair first and second synchronized dynamic range-widening scan image signals;

(j1) in said sequential scan mode, passing said synchronized pair of odd and even lines of said sequential scan image signal to said step (d);

(j2) in said interlace scan mode, passing said interlace scan image signal to said step (d) as said first input image signal, and

(j3) in said WS mode, passing said dynamic range widened image signal to said step (d) as said first input image signal

(d3) doing the ordinary image regulations for said dynamic range-widened image signal to provide a regulated dynamic range-widened image signal; and, wherein

said step (g) outputs a (g3) outputting said regulated dynamic range-widened image signal in said dynamic range-widening scan WS mode.

3. (Currently Amended) A method of supporting at least a dynamic range-widening scan mode and a sequential scan mode in a single imager $[(1)]$ for use in a video camera wherein the imager $[(1)]$ includes a CCD portion $[(14)]$, the method comprising the steps of:

(a) in response to a WS mode selection signal, causing said CCD portion ~~[(14)]~~ to ~~generating~~ generate ~~a corresponding one of~~ a dynamic range-widening scan WS image signal of $2N$ lines ~~and a sequential scan image signal of $2n$ lines~~, N being the number of scan lines of an image to be obtained, and every other line of said dynamic range-widening scan WS image signal being exposed longer than adjacent lines of said dynamic range-widening scan WS image signal;

(a2) in response to a sequential mode selection signal, causing said CCD portion (14) to generate a sequential scan image signal, said sequential scan image signal having $2X$ lines composed of odd lines and even lines;

(b) synchronizing each pair of odd lines and even lines of ~~a given~~ the sequential scan image signal;

(b2) synchronizing each of odd lines of said dynamic range-widening scan image signal with a corresponding even line of said dynamic range-widening scan image signal to provide a first synchronized dynamic range-widening scan image signal of odd lines and a second synchronized dynamic range-widening scan image signal of even lines;

(c) generating a dynamic range-widened image signal from ~~each pair odd lines and even lines of said WS image signal~~ first and second synchronized dynamic range-widening scan image signals in said dynamic range-widening scan WS mode;

(d) doing ordinary image regulations ~~such as contour correction in parallel to a first input image signal and a second input image signal~~ for said synchronized odd and even lines of the sequential scan image signal to provide ~~a first regulated image signal and a second regulated image signal~~ a first regulated sequential scan image signal of odd lines and a second regulated sequential scan image signal of even lines;

~~(e1) in said sequential scan mode, passing said synchronized pair of odd and even lines of said sequential scan image signal to said step (d),~~

~~(e2) in said WS mode, passing said dynamic range widening image signal to said step (d) as said first input image signal,~~

(d2) doing the ordinary image regulations for said dynamic range-widened image signal to provide a regulated dynamic range-widened image signal;

(f) in response to ~~said mode selection signal~~ indicating said sequential scan mode selection signal, generating a new sequential scan image signal from said first and second regulated sequential scan image signals, which are composed of regulated odd and even line signals in the sequential scan mode;

~~(g) in response to said mode selection signal indicating said sequential scan mode, adding said first and second regulated image signals (i.e. said regulated odd and even line signals) together to generate a new interlace scan image signal, and~~

(h) outputting a the regulated dynamic range-widened image signal in said dynamic range-widening scan ~~WS mode and said new interlace scan image signal in said sequential scan mode; and~~

(h2) outputting said new sequential scan image signal in said sequential scan mode.

4. (Currently Amended) A method as defined in claim 1, wherein said step (d) ~~includes~~ comprises the steps of:

in said sequential scan mode, calculating a first vertical contour correction value for each ~~of a current odd line and a current even line~~ pair of current synchronized odd and even lines of

said sequential scan image signal by using ~~[[6]]~~ six lines of data including said ~~current pair of~~
current synchronized odd and even lines in the center of the ~~[[6]]~~ six lines;

~~in said interlace scan mode, calculating a second vertical contour correction value for a~~
~~current line of said interlace scan image by using 5 lines of data including said current line in the~~
~~center of the 5 lines, and~~

performing a vertical contour correction by using said ~~calculated~~ first vertical contour
correction value, and said step (d2) includes the steps of:

in said interlace scan mode, calculating a second vertical contour correction value for
each current line of said interlace scan image signal by using five lines of data including said
current line in the center of the five lines; and

performing a vertical contour correction by using said second vertical contour correction
value.

5. (Currently Amended) A method as defined in claim 2, wherein said step ~~(d)~~ (d3)
includes comprises the steps of:

~~in said sequential scan mode, calculating a first vertical contour correction value for each of~~
~~a current odd line and a current even line of said sequential scan image signal by using 6 lines of~~
~~data including said current odd and even lines in the center of the 6 lines,~~

in said dynamic range-widening scan mode a mode other than said sequential scan mode,
calculating a ~~second~~ third vertical contour correction value for a ~~current~~ each current line of said
first input image signal dynamic range-widened image signal by using ~~[[5]]~~ five lines of data
including said current line in the center of the ~~[[5]]~~ five lines; and

performing a vertical contour correction by using said ~~calculated~~ third vertical contour correction value.

6. (Currently Amended) A method as defined in claim 3, wherein said step (d) ~~includes~~ comprises the steps of:

in said sequential scan mode, calculating a first vertical contour correction value for each ~~of a current odd line and a current even line~~ pair of current synchronized odd and even lines of said sequential scan image signal by using ~~[[6]]~~ six lines of data including said ~~current~~ pair of current synchronized odd and even lines in the center of the ~~[[6]]~~ six lines;

~~in said WS mode, calculating a second vertical contour correction value for a current line of said WS image signal by using 5 lines of data including said current line in the center of the 5 lines;~~
and

performing a vertical contour correction by using said ~~calculated~~ first vertical contour correction value, and said step (d2) includes the steps of:

in said dynamic range-widening scan mode, calculating a second vertical contour correction value for each current line of said dynamic range-widened image signal by using five lines of data including said current line in the center of the five lines; and

performing a vertical contour correction by using said second vertical contour correction value.

7. (Currently Amended) An imager (1) for use in a video camera, which supports at least an interlace scan mode and a sequential scan mode, the imager (1) comprising:

CCD means (14), ~~responsive to a mode selection signal, for generating a corresponding one~~
~~of an interlace scan image signal in response to an interlace scan mode selection signal and a~~
~~sequential scan image signal, said sequential scan image being comprises of $2n$ scan lines, where N~~
~~is the number of scan lines of an image to be obtained and generating a sequential scan image~~
signal in response to a sequential mode selection signal, said sequential scan image signal having
 $2N$ lines composed of odd lines and even lines, where N is the number of scan lines of an image
to be obtained;

synchronizing means for synchronizing each pair of odd lines and even lines of a given
the sequential scan image signal generated by the CCD means to produce a synchronized odd
and even lines of the sequential scan image signal;

~~means for passing said interlace scan image signal in said interlace scan mode and said~~
~~synchronized pair of odd and even lines of said given image signal in other scan mode;~~

~~regulation means for doing ordinary image regulations such as contour correction in~~
~~parallel to a first input image signal and a second input image signal for said synchronized odd~~
and even lines of the sequential scan image signal produced by the synchronizing means to
provide a first regulated image signal and a second regulated image signal a first regulated
sequential scan image signal of odd lines and a second regulated sequential scan image signal of
even lines, and doing the ordinary image regulations for said interlace scan image signal
generated by the CCD means to provide a regulated interlace scan image signal;

generating means, responsive to ~~said mode selection signal indicating said sequential scan~~
~~mode selection signal~~, for generating a new sequential scan image signal from said first and
second regulated sequential scan image signals provided by the regulation means, which are
composed of regulated odd and even line signals in the sequential scan mode;

~~means, responsive to said mode selection signal indicating said sequential scan mode, for adding said first and second regulated image signal (i.e., said regulated off and even line signals) together to generate a new interlace scan image signal, and~~

first outputting means for outputting a the regulated interlace scan image signal provided by the regulation means in said interlace scan mode and said new interlace scan image signal in said sequential scan mode; and

second outputting means for outputting said new sequential scan image signal generated by the generating means in said sequential scan mode.

8. (Currently Amended) An imager as defined in claim 7, wherein the imager further supports a dynamic range-widening scan (WS) mode, ~~wherein said CCD means includes and~~ wherein the imager further comprising:

~~second generating means for generating a corresponding one of an interlace scan image signal, a sequential scan image signal and a dynamic range-widening scan WS image signal of 2N lines in response to a WS mode selection signal, every other line of the dynamic range-widening scan WS image signal, and wherein the images further comprising;~~

second synthesizing means for passing synchronizing each of odd lines of said dynamic range-widening scan WS image signal generated by the second generating means to said synchronized means with a corresponding even line of said dynamic range-widening scan image signal to said step (b) to provide a first synchronized dynamic range-widening scan image signal of odd lines and a second synchronized pair of odd and even lines of said WS image signal dynamic range-widening scan image signal of even lines;

third generating means for generating a dynamic range-widened image signal from said second-synchronized pair first and second synchronized dynamic range-widening scan image signals provided by the second synthesizing means;

~~means for, in said sequential scan mode, passing said synchronized pair of odd and even lines of said sequential scan image signal to said regulation means~~

~~means for, in said interlace scan mode, passing said interlace scan image signal to said regulation means as said first input image signal, and~~

~~means for, in said WS mode, passing said dynamic range-widening signal to said regulation means as said first input image signal~~

second regulation means for doing the ordinary image regulations for said dynamic range-widened image signal generated by the third generating means (40) to provide a regulated dynamic range-widened image signal; and, wherein

~~said outputting means outputs a~~ third outputting means for outputting said regulated dynamic range-widened image signal provided by the second regulation means in said dynamic range-widening scan ~~WS mode.~~

9. (Currently Amended) An imager $[(1)]$ for use in a video camera, which supports at least a dynamic range-widening scan mode and a sequential scan mode, the imager $[(1)]$ comprising:

CCD means ~~, responsive to a mode selection signal, for generating a corresponding one of~~ a dynamic range-widening scan (WS) image signal of $2N$ lines in response to a WS mode selection signal and a sequential scan image signal of $2n$ lines, and generating a sequential scan image signal in response to a sequential mode selection signal, N being the number of scan lines

of an image to be obtained, ~~and every other line of said dynamic range-widening scan WS image signal being exposed longer than adjacent lines of said dynamic range-widening scan WS image signal, said sequential scan image signal having 2N lines composed of odd lines and even lines;~~

synchronizing means for synchronizing each pair of odd lines and even lines of a given the sequential scan image signal generated by the CCD means, and synchronizing each of odd lines of said dynamic range-widening scan image signal generated by the CCD means (14) with a corresponding even line of said dynamic range-widening scan image signal to provide a, first synchronized dynamic range-widening scan image signal of odd lines and a second synchronized dynamic range-widening scan image signal of even lines;

generating means for generating a dynamic range-widened image signal from said each pair of odd lines and even lines of said WS image signal first and second synchronized dynamic range-widening scan image signals provided by the synchronizing means [(30)] in said dynamic range-widening scan WS mode;

regulation means for doing ordinary image regulations such as contour correction in parallel to a first input image signal and a second input image signal for said odd and even lines of the sequential scan image signal synchronized by the synchronizing means to provide a first regulated image signal and a second regulated image signal a first regulated sequential scan image signal of odd lines and a second regulated sequential scan image signal of even lines, and doing the ordinary image regulations for said dynamic range-widened image signal generated by the generating means to provide a regulated dynamic range-widened image signal;

means for, in said sequential scan mode, passing said synchronized pair of odd and even lines of said sequential scan image signal to said regulation means and for, in said WS mode,

~~passing said dynamic range widening image signal to said regulation means as said first input image signal;~~

~~second generating means, responsive to said mode selection signal indicating said sequential scan mode~~ selection signal, for generating a new sequential scan image signal from said first and second regulated sequential scan image signals provided by the regulation means, which are composed of regulated odd and even line signals in the sequential scan mode;

~~means, responsive to said mode selection signal indicating said sequential scan mode, for adding said first and second regulated image signals (i.e. said regulated odd and even line signals) together to generate a new interlace scan image signal; and~~

first outputting means for outputting a the regulated dynamic range-widened image signal provided by the regulation means in said dynamic range-widening scan ~~WS mode and said new interlace scan image signal in said sequential scan mode; and~~

second outputting means for outputting said new sequential scan image signal generated by the second generating means in said sequential scan mode.

10. (Currently Amended) An imager as defined in claim 7, wherein said regulation means ~~includes~~ comprises:

means for, in said sequential scan mode, calculating a first vertical contour correction value for each of a ~~current odd line and a current even line~~ pair of current synchronized odd and even lines of said sequential scan image signal by using ~~[[6]]~~ six lines of data including said ~~current~~ pair of current synchronized odd and even lines in the center of the ~~[[6]]~~ six lines;

~~means for, in said interlace scan mode, calculating a second vertical contour correction value for a current line of said interlace scan image signal by using 5 lines of data including said current line in the center of the 5 lines, and~~

means for performing a vertical contour correction by using said ~~ealeulated~~ first vertical contour correction value;

means for, in said interlace scan mode, calculating a second vertical contour correction value for each current line of said interlace scan image signal by using five lines of data including said current line in the center of the five lines; and

means for performing a vertical contour correction by using said second vertical contour correction value.

11. (Currently Amended) An imager as defined in claim 8, wherein said regulation means ~~includes~~ comprises:

~~means for, in said sequential scan mode, calculating a first vertical contour correction value for each of a current odd line and a current even line of said sequential scan image signal by suing 6 lines of date including said current odd and even lines in the center of the 6 lines;~~

means for, in said dynamic range-widening scan mode ~~a mode other than said sequential scan mode~~, calculating a ~~second~~ third vertical contour correction value for ~~a current~~ each current line of said ~~first input image signal~~ dynamic range-widened image signal by using 5 lines of data including said current line in the center of the 5 lines; and

means for performing a vertical contour correction by using said ~~ealeulated~~ third vertical contour correction value.

12. (Currently Amended) An imager as defined in claim 9, wherein said regulation means ~~includes~~ comprises:

means for, in said sequential scan mode, calculating a first vertical contour correction value for each ~~of a current odd line and a current even line~~ pair of current synchronized odd and even lines of said sequential scan image signal by using ~~[[6]]~~ six lines of data including said current, pair of current synchronized odd and even lines in the center of the ~~[[6]]~~ six lines;

~~means for, in said WS mode, calculating a second vertical contour correction value for a current line of said WS image signal by using 5 lines of data including said current line in the center of the 5 lines, and~~

means ~~(58)~~ for performing a vertical contour correction by using said ~~calculated~~ first vertical contour correction value;

means for, in said dynamic range-widening scan mode, calculating a second vertical contour correction value for each current line of said dynamic range-widened image signal by using five lines of data including said current line in the center of the five lines; and

means for performing a vertical contour correction by using said second vertical contour correction value.

13. (Currently Amended) An integrated circuit, for use in a video camera, which processes an image signal supplied from a CCD portion of the camera in ~~a specified~~ any one of at least an interlace scan mode and a sequential scan mode, wherein the CCD portion is capable of generating at least an interlace scan image signal based on the interlace scan mode and a sequential scan image based on the sequential scan mode, the sequential scan image signal ~~being~~

~~comprised of having~~ 2N lines composed of odd lines and even lines, where N is the number of scan lines of an image to be obtained, the integrated circuit comprising:

synchronizing means for synchronizing each pair of odd lines and even lines of a given the sequential scan image signal generated by the CCD portion to produce a synchronized odd and even lines of the sequential scan image signal;

~~means for passing said interlace beam image signal in said interlace scan mode and said synchronized pair of odd and even lines of said given image signal in other scan mode,~~

~~regulation means for doing ordinary image regulations such as contour correction in parallel to a first input image signal and a second input image signal for said synchronized odd and even lines of the sequential scan image signal synchronized by the synchronizing means to provide a first regulated image signal and a second regulated image signal a first regulated sequential scan image signal of odd lines and a second regulated sequential scan image signal of even lines, and doing the ordinary image regulations for said interlace scan image signal generated by the CCD portion to provide a regulated interlace scan signal;~~

generating means (60), responsive to said mode selection signal indicating said sequential scan mode selection signal, for generating a new sequential scan image signal from said first and second regulated sequential scan image signals provided by the regulation means, which are composed of regulated odd and even line signals in the sequential scan mode;

~~means, responsive to said mode selection signal indicating said sequential scan mode, for adding said first and second regulated image signals (i.e., said regulated odd and even line signals) together to generate a new interlace scan image signal, and~~

means for outputting a the regulated interlace scan image signal provided by the regulation means in said interlace scan mode ~~and said new interlace scan image signal in said sequential scan mode; and~~

means for outputting said new sequential scan image signal generated by the generating means in said sequential scan mode.

14. (Currently Amended) An integrated circuit as defined in claim 13, ~~wherein the imager further supports~~ which further processes an image signal supplied from the CCD portion of the camera in a dynamic range-widening scan WS mode, wherein said CCD portion can further generate a dynamic range-widening scan WS image signal of 2N lines based on the dynamic range-widening scan mode, every other line of the dynamic range-widening scan WS image signal being exposed longer than adjacent lines of said dynamic range-widening scan WS image signal, and wherein the integrated circuit further comprises:

means for passing synchronizing each of odd lines of said dynamic range-widening scan WS image signal to said synchronizing means with a corresponding even line of said dynamic range-widening scan image signal to said step (b) to provide a first synchronized dynamic range-widening scan image signal of odd lines and a second synchronized pair of odd and even lines of said WS image signal dynamic range-widening scan image signal of even lines;

means for generating a dynamic range-widened image signal from said second synchronized pair first and second synchronized dynamic range-widening scan image signals;

means for, in said sequential scan mode, passing said synchronized pair of odd and even lines of said sequential scan image signal to said regulation means

~~means for, in said interlace scan mode, passing said interlace scan image signal to said regulation means as said first input image signal, and~~

~~means for, in said WS mode, passing said dynamic range widened image signal to said regulation means as said first input image signal, wherein:~~

~~means for doing the ordinary image regulations for said dynamic range-widened image signal to provide a regulated dynamic range-widened image signal; and~~

~~said outputting means outputs a~~ means for outputting said regulated dynamic range-widened image signal in said dynamic range-widening scan WS mode.

15. (Currently Amended) An integrated circuit, for use in a video camera, which processes an image signal supplied from a CCD portion of the camera in ~~a specified~~ any one of at least a dynamic range-widening scan mode and a sequential scan mode, wherein the CCD portion is capable of generating at least a dynamic range-widening scan ~~WS~~ image signal of 2N lines based on the dynamic range-widening scan mode and a sequential scan image signal of 2N lines based on the sequential scan mode, N being the number of scan lines of an image to be obtained, ~~and~~ every other line of said dynamic range-widening scan WS image signal being exposed longer than adjacent lines of said dynamic range-widening scan WS image signal, the integrated circuit comprising:

synchronizing means for synchronizing each pair of odd lines and even lines of a given the sequential scan image signal generated by the CCD portion, and synchronizing each of odd lines of said dynamic range-widening scan image signal generated by the CCD portion (14) with a corresponding even line of said dynamic range-widening scan image signal to provide a first

synchronized dynamic range-widening scan image signal of odd lines and a second synchronized dynamic range-widening scan image signal of even lines;

first generating means for generating a dynamic range-widened image signal from said ~~each pair odd lines and even lines of said WS image signal~~ first and second synchronized dynamic range-widening scan image signals provided by the synchronizing means in said dynamic range-widening scan WS mode;

~~regulation means for doing ordinary image regulations such as contour correction in parallel to a first input image signal and a second input image signal~~ for said synchronized odd and even lines of the sequential scan image signal synchronized by the synchronizing means to provide a first regulated image signal and a second regulated image signal a first regulated sequential scan image signal of odd lines and a second regulated sequential scan image signal of even lines, and doing the ordinary image regulations for said dynamic range-widened image signal to provide a regulated dynamic range-widened image signal;

~~means for, in said sequential scan mode, passing said synchronized pair of odd and even lines of said sequential scan image signal to said regulation means and for, in said WS mode, passing said dynamic range widening image signal to said regulation means as said first input image signal;~~

second generating means, responsive to said ~~mode selection signal~~ indicating said sequential scan mode selection signal, for generating a new sequential scan image signal from said first and second regulated sequential scan image signals provided by the regulation means, which are composed of regulated odd and even line signals in the sequential scan mode;

~~means, responsive to said mode selection signal indicating said sequential scan mode, for adding said first and second regulated image signals (i.e. said regulated odd and even line signals) together to generate a new interlace scan image signal, and~~

first outputting means for outputting a the regulated dynamic range-widened image signal provided by the regulation means in said dynamic range-widening scan WS mode and said new interlace scan image signal in said sequential scan mode; and

second outputting means for outputting said new sequential scan image signal generated by the second generating means in said sequential scan mode.

16. (Currently Amended) An integrated circuit as defined in claim 13, wherein said regulation means ~~includes~~ comprises:

~~means for, in said sequential scan mode, calculating a first vertical contour correction value for each of a current odd line and a current even line~~ pair of current synchronized odd and even lines of said sequential scan image signal by using 6 lines of data including said ~~current pair~~ of current synchronized odd and even lines in the center of the 6 lines;

~~means for, in said interlace scan mode, calculating a second vertical contour correction value for a current line of said interlace scan image signal by using 5 lines of data including said current line in the center of the 5 lines; and~~

~~means for performing a vertical contour correction by using said ealeulated~~ first vertical contour correction value ;

means for, in said interlace scan mode, calculating a second vertical contour correction value for each current line of said interlace scan image signal by using five lines of data including said current line in the center of the five lines; and

means for performing a vertical contour correction by using said second vertical contour correction value.

17. (Currently Amended) An integrated circuit as defined in claim 14, wherein said regulation means ~~includes~~ comprises:

~~means for, in said sequential scan mode, calculating a first vertical contour correction value for each of a current odd line and a current even line of said sequential scan image signal by using 6 lines of data including said current odd and even lines in the center of the 6 lines;~~

means for, in said dynamic range-widening scan mode ~~a mode other than said sequential scan mode~~, calculating a ~~second~~ third vertical contour correction value for ~~a current~~ each current line of said ~~first input image signal~~ dynamic range-widened image signal by using ~~[[5]]~~ five lines of data including said current line in the center of the ~~[[5]]~~ five lines; and

means for performing a vertical contour correction by using said ~~calculated~~ third vertical contour correction value.

18. (Currently Amended) An integrated circuit as defined in claim 15, wherein said regulation means ~~includes~~ comprises:

means for, in said sequential scan mode, calculating a first vertical contour correction value for each of ~~a current odd line and a current even line~~ pair of current synchronized odd and even lines of said sequential scan image signal by using ~~[[6]]~~ six lines of data including said ~~current~~ pair of current synchronized odd and even lines in the center of the ~~[[6]]~~ six lines;

~~means for, in said WS mode, calculating a second vertical contour correction value for a current line of said WS image signal by using 5 lines of data including said current line in the center of the 5 lines; and~~

means for performing a vertical contour correction by using said ~~ealeulated~~ first vertical contour correction value;

means for, in said dynamic range-widening scan mode, calculating a second vertical contour correction value for each current line of said dynamic range-widened image signal by using five lines of data including said current line in the center of the five lines; and

means for performing a vertical contour correction by using said second vertical contour correction value.

19. (Newly Added) A method as defined in claim 1, further comprising the steps of:

(f) in response to said sequential scan mode selection signal, adding said first and second regulated image signals together to generate a new interlace scan image signal; and
(g2) outputting said new interlace scan image signal in said sequential scan mode.

20. (Newly Added) A method as defined in claim 3, further comprising the steps of:

(g) in response to said sequential scan mode selection signal, adding said first and second regulated image signals together to generate a new interlace scan image signal; and
(h2) outputting said new interlace scan image signal in said sequential scan mode.

21. (Newly Added) An imager as defined in claim 7, further comprising:

adding means for, responsive to said sequential scan mode selection signal, adding said first and second regulated image signals together to generate a new interlace scan image signal;
and

means for outputting said new interlace scan image signal generated by the adding means in said sequential scan mode.

22. (Newly Added) An imager as defined in claim 9, further comprising:

adding means for, responsive to said sequential scan mode selection signal, adding said first and second regulated image signals together to generate a new interlace scan image signal;
and

means for outputting said new interlace scan image signal generated by the adding means in said sequential scan mode.

23. (Newly Added) An integrated circuit as defined in claim 13, further comprising:

adding means for, responsive to said sequential scan mode selection signal, adding said first and second regulated image signals together to generate a new interlace scan image signal;
and

means for outputting said new interlace scan image signal generated by the adding means in said sequential scan mode.

24. (Newly Added) An integrated circuit as defined in claim 15, further comprising:
adding means for, responsive to said sequential scan mode selection signal, adding said first and second regulated image signals together to generate a new interlace scan image signal;
and
means for outputting said new interlace scan image signal generated by the adding means in said sequential scan mode.